

color of the spirally crispate hairs, which form a copious rather loose tomentum thickly covering the under side of the segments.

*SELAGINELLA NEOMEXICANA* Maxon.—This species was founded on several collections from the Organ Mountains of New Mexico and has since been reported only from the vicinity of Paradise, Arizona. An eastward extension of range is noted in specimens from Mt. Franklin, El Paso, Texas, recently received from Mrs. Elsie McE. Slater. The plants are said to have come from the perpendicular walls of a canyon on the southwestern flank of the mountain. It is apparently a rare species.

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### Recent Fern Literature

The search for *Lycopodium* prothallia goes on<sup>1</sup> so successfully that the authors of one of the latest reports on them—Professors Alma G. Stokey and Anna M. Starr, of Mt. Holyoke College—say that they are probably much less rare than has been supposed—a statement which seems eminently justified by the commonness of mature plants which must have originated somehow. The difficulty is to see your first prothallium, or the tiny sporeling which indicates its probable presence; once your eye is trained and you have learned where to look and, maybe, the technique of sifting prothallia out of a trowelful of earth, finding them is a comparatively simple matter—though still one of care and patience.

Professors Stokey and Starr report seven stations in “western Massachusetts”—which in this case means the Connecticut valley—at which they have found prothallia. *L. obscurum* was represented at five of them, *L. clava-*

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<sup>1</sup> See FERN JOURNAL 13: 122, 1923.

*tum* at one, and at three what the authors call *L. complanatum*. In that region, however, their plant can hardly have been the typical form of the species; it must have been the var. *flabelliforme*. The distinction would seem to be worth making, as a matter of taxonomic and geographic exactness. The variety is confined to a comparatively restricted area in eastern North America, mostly in the northeastern United States. Typical *L. complanatum* is a more northern plant and, as so often in similar cases, ranges across the American and Eurasian continents. There are interesting possibilities here, but though American investigators of *Lycopodium* prothallia have been at the pains of distinguishing the comparatively unimportant and possibly merely ecological variety *dendroideum* of *L. obscurum*, none of them has thought it worth while to indicate which of the two elements of *L. complanatum* he had, or whether prothallia of the American plant showed any differences from those of the European. It is true that Spessard's drawing (Bot. Gaz. **63**: 71, 1917) shows no obvious difference; but in northern Michigan, where he worked, either typical form or variety might occur, and there is no telling which he had.

The seven stations were, roughly, of three types—mixed hardwoods on a slope above a body of water, small depressions in dry mixed hardwoods, and a hemlock grove. In one case only was there any considerable deposit of leaves; in none was there any herbaceous growth. In all the soil was sandy and well-drained, with considerable humus. It was found in the laboratory that prothallia would not live long in undrained soil, though well developed sporelings survived. The authors conclude that though “old plants are frequently found in swampy places, the indications are they did not start there.” Allowing for the power of travelling presumably pos-

sessed by the creeping stems of these three species, it may well be that a sufficiently old plant might be found at some distance from its point of origin; but the present writer cannot recall having seen specimens of any of the three (with the possible exception of *L. obscurum*) in really swampy places. Perhaps the readers of the JOURNAL can throw light on the habitat of these plants, as they did on that of *Ophioglossum*; they are hereby invited to do it.<sup>2</sup>

Dr. Otto Degener reports four other stations in Massachusetts for prothallia of "*L. complanatum*" and *L. obscurum*, var. *dendroideum*. The latter were found in great numbers—three hundred in one small area—and are described in detail and illustrated. Various interesting facts about the prothallia of both are recorded. Sporelings, for instance, are produced equally well whether the surface of the prothallium which bears the reproductive organs is vertical or horizontal, or, in the latter case, on the upper or under side. Young plants of *L. complanatum* [var. *flabelliforme*] have the leaves scale-like at first, then awl-shaped, up to 4 mm. long, and arranged in whorls of three about 2 mm apart. Only after the stem has begun to branch do the leaves become four-ranked and the lateral ones developed so as to give the characteristic flattened effect to the branches.<sup>3</sup>

C. A. W.

FRAGRANT MASSACHUSETTS FERN.—Last August, while on a visit to Marion, Mass., at the head of Buzzard's Bay, I passed one day a bit of woodland, of mixed trees, where, as far as the eye could reach, the underbrush had

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<sup>2</sup> Stokey, Alma G., and Starr, Anna. M. *Lycopodium* prothallia in western Massachusetts. *Bot. Gaz.* 77: 80–88. March, 1924.

<sup>3</sup> Degener, Otto. Four new stations of *Lycopodium* prothallia. *Bot. Gaz.* 77: 89–95. Pls. XI–XIII, 2 figs. March, 1924.